

Francis J. Bond
Esq.

LETTER

ON

THE CHOLERA ASPHYXIA,

NOW PREVAILING

IN THE CITY OF NEW-YORK:

ADDRESSED TO

JAMES BOND READ, M.D.

CHAIRMAN OF THE MEDICAL BOARD, SAVANNAH.

✓
BY JOHN W. FRANCIS, M.D.

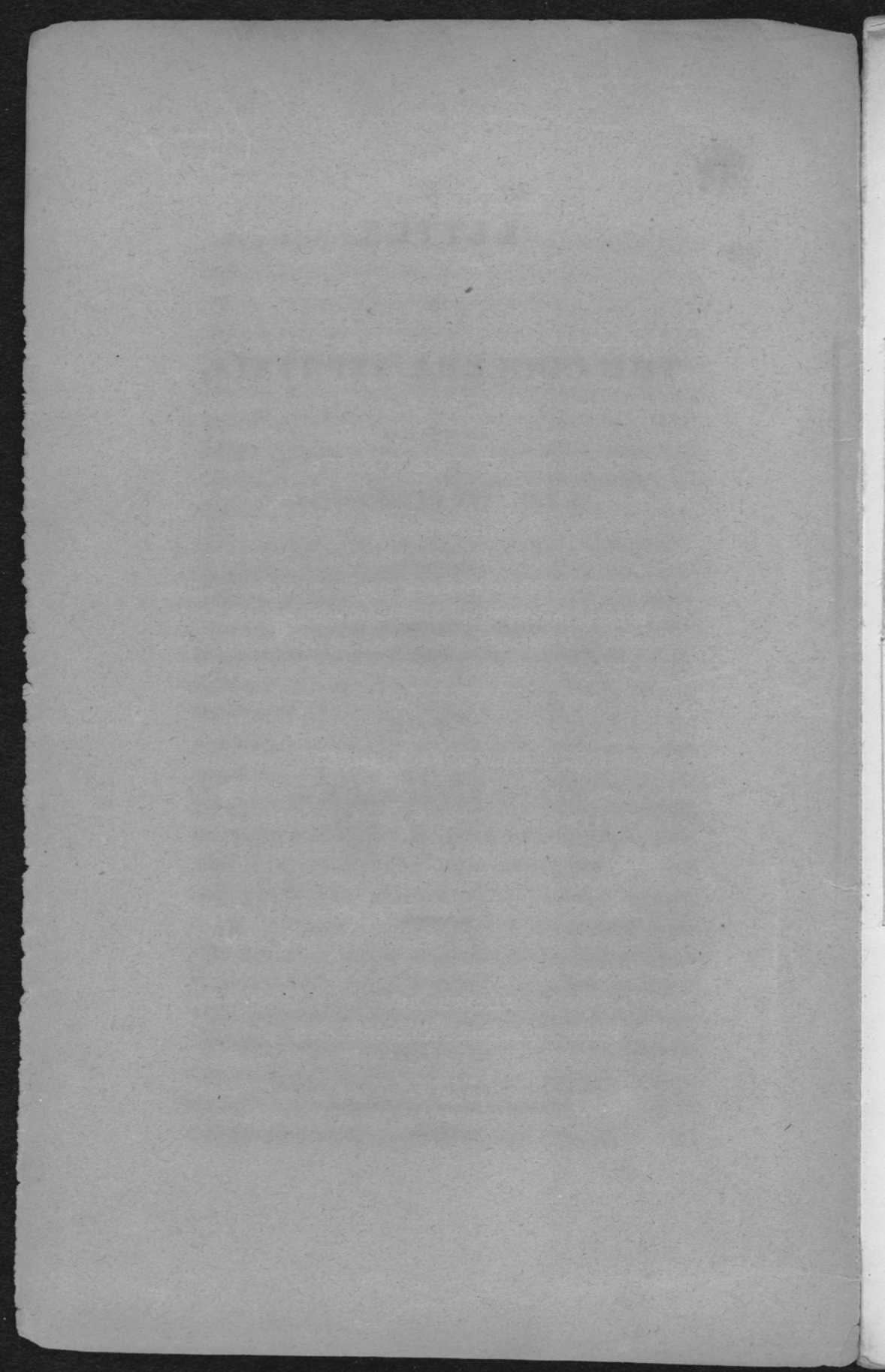
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1832.

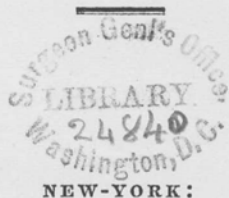


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NOTICE.

THE following Letter on the Cholera now prevailing in the city of New-York, was written at the request of the gentleman to whom it is addressed. In it I have attempted to note, in part, chiefly what came within my own observation. This Letter originally appeared in the NEW-YORK MIRROR, a weekly paper of extensive circulation. The favorable opinion expressed of it by some of my medical friends, and the hope that it may prove serviceable during the present crisis, have led to its re-publication in the pamphlet form.

September 8, 1832.

LETTER
ON
THE CHOLERA ASPHYXIA.

NEW-YORK, August 16th 1832.

RESPECTED SIR,

Your kind letter was duly received, and I have several times attempted to write you an answer; but such has been the severity of my professional engagements, that the present is the first leisure I could command for the purpose. We have, indeed, become "unfortunately familiar with the disease;" and this circumstance alone authorizes me to make this communication to you, and to your medical board, should you deem it of sufficient consequence to submit it to them.

I was, at first, among those who rejected the idea that the India cholera had appeared in Canada, and considered the disease of Montreal and Quebec, as owing its peculiar character and virulence to a combination of causes, such as we know usually gives malignity to endemical and epidemical disorders in certain latitudes. When the commit-

tee, appointed by our board of health, made their report, that the Canadian disease was similar to that which had for so many years prevailed in Asia and in Europe, I was the less incredulous, inasmuch as one (Dr. Dekay) of the medical gentlemen of that committee had been practically conversant with the Asiatic cholera, in its epidemic form, while he was in Constantinople, some short time before. As the history of the progress of the Asiatic cholera now left us little room to doubt that New-York would ere long be visited by this pestilence, I could not remain indifferent to the first intimations that were given of its appearance among us, and I accordingly saw, in consultation with Dr. Powers, the first cases which were reported to our board of Health, as prevailing in that part of the city called Cherry-street, near James-slip, on the East-River. This, I believe, was on the twenty-seventh June. From the suddenness of the attack, the train of symptoms, and its rapid and fatal termination, no question existed of the complaint being essentially different from the ordinary cholera morbus, which we encounter each revolving season. A map of the city of New-York will enable you fully to trace the progress of the disease. After several fatal cases had occurred in Cherry-street, the disorder appeared on the opposite side of the city, near the North-River, in Reed-street, Duane-street, &c.; thence it showed itself in Laurens-street near Canal-street, next in Orange-street, Cross-street, Mulberry-street, and in other con-

tiguous streets; and broke out with extreme malignancy at and around a spot denominated the Five-Points. All this was effected within about the close of the second week. Since that time it has displayed its force most extensively throughout the city, and cases have occurred simultaneously miles asunder from each other. The disease has raged with greatest mortality in the sixth ward. The reports of interments, by the city inspector, show that about two thousand-six-hundred deaths have already taken place from the cholera: and, notwithstanding the received opinion that an epidemic disease swallows up all other disorders, we have had a season of sickness, from other complaints, much greater than ordinary. The remark, nevertheless, is of frequent repetition, that affections, in no wise congenerous, have in numerous instances put on the livery of the prevailing epidemic.

I need not attempt to describe the symptoms which mark the invasion of the disease, nor those which characterize it when it is fully formed. They must be known to you from the writings of such authors as Annesley, whose account of the Asiatic cholera I deem the best; Kirke, whose pamphlet on cholera asphyxia is also excellent; the tract of Dr. Thackrah, on the cholera of Leeds, and other productions. There is no disorder in the nosology more distinctly marked: there is none less liable to be forgotten, when once particularly observed. The declaration is abundantly verified, that the disease almost always commences with a deranged

condition of the digestive organs, such as a disturbed state of the stomach and bowels, sickness, and an uneasy sensation in the whole track of the intestinal canal; vomiting, diarrhœa, pains in and about the epigastric region, a sense of weight, heat, burning with thirst at the pit of the stomach, and a feeling of exhaustion. The tongue is various, furred, slimy, pale, leaden, red, and occasionally swollen. Sometimes spasmodic contraction of the abdominal and thoracic muscles occur. The appetite often not impaired, but digestion labored and imperfect. These, or a part of these, are by some pronounced the precursors of the complaint. When the disorder is more advanced and deeper seated, we generally find a greater distress of the thoracic and abdominal viscera, the spasms are occasionally of the clonic kind, like those of violent cholera. There is greater præcordial weight or visceral fullness. The extremities, both superior and inferior, lose their temperature, and become colder as the disease advances; the skin is covered with a cold, raw moisture; the integuments, especially of the extremities, seem shriveled, or sodden, or water-soaked, or doughy; the tongue is cold, sometimes icy, the respiration is more labored, and the expired air of a chilly dampness; the eyes are sunken, invested with a dark or livid circle; the pulse, which at the coming on of the disorder is sometimes more frequent than natural, is now small, contracted, and, finally, can scarcely, or not at all, be felt at the wrist.

But you are not to depend upon the regular occurrence of the premonitory evidences of the disease, nor of their going through their entire course, as I now trace them to a fatal termination. Many cases of cholera have taken place among us, in which the premonitory signs, or symptoms, were wholly absent, and the complaint has so suddenly invaded, that the stage of collapse has been fully formed within some two, three, or four hours. Nay, death has closed the scene within two or three hours from apparent good health. As in cases of yellow fever, some are violently assailed while walking the streets, or riding on horseback; and I have known three cases of children attacked by the cholera while in lively exercise at play. A most striking peculiarity of this complaint, in many instances, is, that the intellectual powers, unless overwhelmed by coma, retain their wonted integrity to the last. Often there is an entire absence of all suffering some time before death; and the observation is no less philosophically true than eloquent, that the mind seems to sit unimpaired and serene amidst the ruins of organic life.

I hardly know a greater misnomer than the appellation *cholera* to this prevailing epidemic. The absence of all bile, either in the ejections by vomiting, or in those from the bowels, is almost pathognomonic: the fluids thus liberated are often brownish, or more frequently colorless, or quite distinct from biliary matter; and if biliary discharges are exhibited, they are among the most favorable cir-

cumstances, whether occurring at the invasion of the disorder, or after it has been subjected to the operation of remedial agents. As to the term *spasmodic*, spasm is, perhaps, less frequent in this disorder than in our common cholera morbus. In this opinion I am fortified, by the ample experience and observation of my friend, Dr. Hugh Mc Lean, of this city. Spasms do at times occur, and their violence may denote the greater danger of the case; the nervous power being at times rapidly exhausted by their conjoint action, and the causes by which they are induced; a peculiar mobility in the nervous system may predispose to the spastic rigidity. Fortunately, in a large majority of instances, these spasms are easily subdued by powerful friction, with potent stimuli. The term *asphyxia* is most consonant to the strongest pathognomonic feature the physician witnesses. This state of asphyxia occurs earlier or later, in the progress of the disease, depending upon habit of body, exciting cause, means of relief, &c. I have seen it within a couple of hours from the period of invasion. In some intractable cases it occurs even earlier. This asphyxia seems to me, moreover, to constitute almost the essence of the disorder; for all our prominent indications are to disburden the system of its too deadly grasp, and restore the circulation to its wonted functions. This view of the nature of cholera asphyxia, seems to be more clearly established, when we consider the phenomena which the disease exhibits upon inspection after death.

Many post obit observations have been made by physicians of our public institutions, and some few in private practice. The brain has been found surcharged with dark viscid blood; the ventricles, in some cases, containing considerable effusion of serous, occasionally of sanguineous fluid; the membranes often turgid; effusion between the arachnoid membrane and pia mater. Sometimes the arachnoid was deprived of its transparency. In the spinal column were evident traces of previous increased vascular action and effusion. As to the thoracic cavity, the heart and larger venous branches have been found loaded with heavy black blood, often coagulated, and there was at times apparent what the older pathologists denominated polypi. Sometimes the parietes of the heart seemed thinner than natural; sometimes the heart was found empty, and powerfully contracted. Discolorations or patches were, in a few instances, seen on the heart, and effusion within the pericardium. I have seen the blood released from the large veins, preserving the tenacity and appearance of a tarred rope. Dr. Depeyre found in a majority of his dissections, that the lungs were collapsed or shrunk, and frequently natural; others have observed them heavier than natural, or gorged with black blood.

The abdominal viscera evince, to a greater extent, the influence of diseased action. The mesentery was, in many instances, overloaded with blood. The appearances of the stomach are various; its contents are occasionally a watery, brownish fluid,

or a very pale yellow or turbid fluid: sometimes this organ was found empty and contracted. The mucous coat seemed in most instances affected; and cases were not unfrequent when, upon removing the mucous coat, which could often be easily eroded or rubbed off, the inner coat was seen surcharged and its vessels greatly congested. Sometimes the stomach put on appearances similar to those which obtain in cases where sudden death has been occasioned by drinking cold water in the summer season, a species of stellated inflammation (ecchymoma) if I may be allowed the words, arising, I suppose, from the inordinate action of the organ when its blood-vessels were so unduly injected. I have a drawing of an example of this sort, and it so resembles others in my possession, taken from cold-water cases, that I felt a good deal strengthened in my pathological views by this coincidence. Examples also might be seen where the stomach was entirely unaffected. In two cases which came under my inspection, the subjects of which had died by violent cholera, the superior portions were exsanguine and colorless, the inferior of a deep vermilion color, and the pyloric portion thickened and contracted. The small intestines were in almost all instances contracted, occupied with air, and their vascular ramifications loaded with dark blood; the duodenum seems especially vulnerable to the morbid cause, the ilium more disgorged than the jejunum, especially its inferior section. All the smaller intestines, I may say,

seemed plentifully surcharged, their inner coats softer and paler than natural: rare examples might be found of like morbid changes throughout the whole intestinal canal. The liver was sometimes natural, frequently engorged with dark blood; in several cases the ducts were entirely obstructed or strictured: the gall-bladder was most generally empty, or possessing a small quantity of dark bile: the pancreas bore little or no particular marks of increased vascular fullness: the spleen varied and was sometimes surcharged.

I have designedly been thus minute in stating the changes wrought by diseased action; but you are not to infer uniformity in these appearances; they varied much, depending upon individual constitution, previous organic disorder, or chronic functional derangement. Much depended upon the duration or sudden fatality of the case. These differences in pathological anatomy, were displayed most upon a comparison with different brains, and the derangements of the viscera of different subjects. While in some the vessels of the brain seemed full, in others they were almost empty; and the serous effusion of the ventricles was, in many cases, altogether absent: while again, in some the mucous surface of the whole intestinal tube seemed blanched and exsanguine; in others, it possessed little deviation from the healthy state; and in others was turgescd, of a blue or dark purple color. But not to enlarge at this time, I must refer you to Andral (Pathological Anatomy), for

some admirable remarks, which tend to illustrate these points. While marks of inflammation were seen in some, Dr. Morrell, of the Bellevue hospital, who has made many *post mortem* inspections of cholera subjects, affirms the occurrence of this blanched or livid state of the alimentary tube, as more frequent than any other condition he witnessed. In some dissections, made by Dr. Hobart, this whitish color of the mucous membrane was also particularly noticed.

A good deal has been said by pathologists, concerning the blood in this disease. The engorged state of the heart and greater vessels, of the mesenteric veins, and the like appearances in the brain, of dark, viscid, and tenacious blood, show strong resemblance in the phenomena of death, occasioned by cholera, to the cases induced by lightning, to death caused by drinking cold water while inordinately heated, and to the morbid changes arising from the sudden and violent extinction of life by other causes. In extracting blood long previous to the cessation of life, this *non-vital* state of that fluid was often manifested. Hence, then, I infer that the more immediate cause of death in cholera is by congestion, and by the changes which the constituents of the blood undergo. But I am not permitted to enlarge at this time. If you ask me for a pathological explanation of the morbid phenomena of cholera, I must candidly reply I am not able to give it. It seems to me, however, reasoning from analogy, in the cases of

sudden death by cold water, by lightning, by inhaling carbonic acid gas, and the like, that most of the abnormal appearances we find in cholera, as well as the symptoms and train of disordered action, depend upon an impression received first upon the great ganglionic system; secondly, on the blood, thus creating the asphyxia so conspicuous above all other symptoms, in every case of strongly marked cholera, particularly in its collapsed state. I therefore consider the disease as the consequence of a noxious agent operating primarily upon the nervous system, and secondarily upon the blood-vessels or vascular system. I shall endeavor, at another time, to enlarge upon these imperfect views. I cannot but think that the latest experimental facts, in respiration and in animal chemistry, give countenance to the hints now thrown out. See the experiments of Brodie, and the late observations of Dr. Davy. Corroborative proofs of the soundness of this pathology would seem to arise from the circumstance of the rapid changes and decomposition which the defunct cholera subject undergoes. This was by no means uniformly the case; the occurrence, however, sometimes took place within two or three hours after life had departed. Flaccidity of the muscles sometimes continued as in cases of death by lightning, several hours after death. But let me hasten to that part of the letter which I am aware you will consider, at the present exigency, more important than these speculations—*the treatment of cholera.*

Notwithstanding the numerous publications on this topic, the medical men of this country, as well as those abroad, advance opposite methods of treatment. As, according to Daniel Defoe, the German mountebank had his infallible nostrum against the plague of London, so we have pretended adepts in the prevention and cure of cholera. The diversity of opinion among our faculty arises as much from the different periods or stages of the disease, to which their therapeutical principles refer, as to the discordant pathology which they maintain. You may distinctly observe three stages in the complaint: first, that which embraces the forming or premonitory symptoms, such as I have already stated; more or less of these will invade every subject, and they will vary in force in different individuals, and be modified by accidental circumstances. The second stage constitutes that period when the disorder is further advanced, when the visceral congestion has taken place, accompanied perhaps by spasms, oppression of the intellectual faculties, and a tardy circulation. The third and last stage is that of collapse, frequently alas, the fatal stage. Accordingly, therefore, as our means of relief are applied to these different stages, will they more or less differ. In the first or forming stage, attention to the *primæ viæ*, relieving the bowels of their wonted crudities, and adjusting the common functions of the system, are the objects to be fulfilled. A dose of castor oil, repeated perhaps, the administration of the com-

mon eccoprotic mixture of rhubarb, magnesia, and mint water, or a liberal dose of calomel, with a few grains of aloes, or jalap and crem. tart. may suffice. Hundreds of cases, in the incipient form of cholera, have by these means been arrested; and we are further to remember, how essential it is that the feculent discharges should be restored to their ordinary natural character. In the second stage, that of congestive formation, while we attend to the condition of the *primæ viæ*, let us not forget the importance of blood-letting, the internal use of calomel, blended at times with very small doses of opium: when irritability of the stomach, a tendency to spasm, or other morbid symptoms, point out the combination: the application of blisters to the abdomen, or sinapisms largely applied over the epigastric region; tepid fomentations up the bowels, by means of enemata of water, catnep tea, &c.; the free use of frictions, of a stimulating nature, renewed again and again, to restore the harmony of the circulation, diminish coma, and relieve the laboring viscera. In the third stage, that of collapse, all our efforts will too often prove unavailing. Yet the success which has resulted, in numerous instances, even in so discouraging a state, justifies the physician in assiduous perseverance. Some prescribers, even in this state, have recourse to the lancet; if blood can be drawn from the arm, this is a reason for persisting in the attempt: in despite of the most disheartening prospects, by local hot bathing, or by frictions, the blood has at

length flowed, the pulse relaxed, the heart been relieved, and the circulation restored. But this happy event is of rare occurrence; the cerebral congestion, the abdominal fullness and tension, and perhaps pain, upon pressure, now call in, as proper auxiliaries, leeching, cupping, followed by the extensive application of mustard and vinegar cataplasms to the bowels and feet, bottles of hot water to the feet, almost unremitting efforts in exciting the surface, by frictions with warm flannel or the flesh brush: and among the liniments now most employed, are the two following—equal parts of brandy, camphorated spirits, and cayenne pepper; or spirits of turpentine, camphorated spirits and cayenne pepper: the body in general, and the superior and inferior extremities, are to feel the effects of a free attrition with the liniment, renewed at short intervals: some use hot vinegar and cayenne pepper—others freely aq. ammon. Dr. Roe, of the Greenwich hospital, instead of these means, employs very generally, mercurial ointment, with camphor and cayenne pepper. The prescription is as follows: Ung. mercur. one lb.; pulv. capsic. ann., four ounces; camphor, eight ounces. He rarely uses internal remedies.

As a means of quickly rousing the cold surface, and acting on the deserted capillaries, Dr. Dekay uses, and, I am informed with happy effect, equal parts of cayenne pepper and camphor, and lard, blended with a moderate quantity of muriatic acid; as a rubefacient, is reported to be very rapid in its action. The actual cautery has been applied, and

some have had the temerity to make use of enemata of tobacco. I do not think that due value has been placed upon the use of copious intestinal injections of warm water, with or without salt, in the different stages of the disease. I have used most freely, in the collapsed stage, the liniment of turpentine, camphor, and tincture of capsicum, sometimes with cajeput oil, tincture of flies, &c. and in several appalling cases in this stage, with entire success.

Need I say any thing to you on the preposterous practice of large doses of opium or laudanum, in any of the stages of this complaint? I am sure it is unjustifiable, both from the phenomena which the disorder exhibits, and from autopsic examinations, yet there are advocates for this curative method, who do, inconsiderately enough, as it seems to me, use this narcotic. I know that the irritability of the stomach, the looseness of the bowels, and spasms, may be alleviated by opium or laudanum, and that this remedy, when these symptoms predominate, is indicated; but why still further add to the depressed nervous energy, the spasmodic and vascular congestion, by large anodynes, when irritability and spasms do not occur? I repeat, opium increases the depression of the vital powers: rather, as is already intimated, endeavor to remove this state of oppression, so characteristic of the disorder, by relieving the alarming internal congestion by blisters, external irritation, cupping, leeches, and warm fomentations, or by the warm bath, if at

hand, &c. It is hardly too much to say, that sinapisms, and other external stimulants, are deemed among the indispensable means of cure, in every formidable case of cholera. Allow me again to add an opinion that the laudanum method will augment the congestive condition of the brain and spinal mass, add to the labor and ineffectual efforts of the heart and lungs, and thus multiply the difficulties to reaction. No doubt the cerebral determination has, in many cases, been increased by this anodyne practice. For the axiom, that opium is improper where blood-letting is indicated, applies with peculiar force in cholera asphyxia.

Some of our physicians, imbued with the Broussaisian doctrines of disease, urge, as the most efficient cure, the liberal application of leeches, and the internal use of ice. Unquestionably beneficial must be the employment of leeches, either to the head, or to the abdomen, or to both, provided their application is timely; and ice, in small quantities, repeatedly taken in the manner of pills, has, in a number of instances, allayed very irritable stomachs, and proved salutary in diminishing that inordinate burning and thirst which some patients suffer. But this practice, however, is not energetic enough, and I apprehend few severe cases of cholera, much less those of approaching collapse, have been cured by it.

Another practice which has been highly extolled, is that denominated the camphor treatment. With the advocates of this method of cure, camphor is

the sole therapeutical agent: rarely is any other admitted by them. The treatment is generally from one to three drops of the spirits of camphor, taken in a little water every hour, or two hours, according to circumstances, until a reaction has completely set in. You have ere this, most probably, received flattering accounts of the success of this practice, in all the different forms or stages of this disease. I would not question the benevolence and humanity which have prompted to have recourse to this article, as the great means of cure: the remedy is, in my opinion, inefficient, and pre-eminently calculated to aggravate, at least one formidable symptom, the cerebral determination. Moreover, Orfila has too well pointed out the peculiarities of the action of this drug, to give us any cheering views of its sanatory operation in the present epidemic, and toxicological science rejects such aid in this impending crisis. In short, the camphor treatment in cholera asphyxia is the wrestling of a pigmy with a giant.

The mercurial practice, to the point of salivation, has been urged by many; and it is recommended by others, to keep the system under the moderate action of mercury, both as preventive and curative. I cannot but think that this practice is fraught with error. Mercury, by the peculiar irritability and debility which it often induces, adds to the predisposition to the disease; and when formed, cholera, in a majority of cases, is too rapid in its course to be checked by the uncertain and

tardy salivating influence of calomel, or other mercurials. That our list of mortality by cholera has been enlarged by this method of treatment, is the opinion of some of our best prescribers. Let me not lead you into the error that I am opposed to mercury. I am sensible of its importance, and rely on it often when given, liberally, if you please, with a view of restoring the natural secretions of the bowels; and for this purpose it is indispensable. Inasmuch as cholera seems never to be formed where these secretions are natural, so, perhaps, the complaint is never fully removed, until these alvine excretions are brought to their usual character.

You well know, from ample experience, that when local disorder is deeply seated, the system is less susceptible of counter irritation; and that a proportionably longer time is requisite to attain the object in view: hence, from the very nature of cholera, the mercurial action is not so readily induced, and the disorder advances from this cause, and the probable neglect, in the meanwhile, of other means. If it be true, as has been reported, that by powerful friction, the salivating operation of mercury can be excited in six hours, even in collapsed cases, I am ready to accede to the opinion, that the article deserves a conspicuous place in our list of appropriate remedies. But may not the favorable reports of its beneficial operation be, in some instances, chiefly owing to the powerful friction this method of cure demanded? My judgment, however, may be biassed on this contested

subject. All I would then urge is, that a sound discrimination be exercised in judging if time sufficient be left to give a fair prospect, that the constitutional action of mercury can be secured, ere all hope of recovery is cut off.

Among the available means, then, which we are to employ when apprehensive of the collapsed state, or when it is actually formed, are the free employment of frictions or rubefacients, sinapisms, the internal use of stimuli; such as sulphuric ether, brandy, ammonia, &c. But there are few of us who can largely boast of success, when we have to encounter the *blue* cases. These are the worst forms of collapse, and occur most frequently in gross inebriates.

Apprehensive that I may prove too tedious in my details, and thus render these cursory observations less satisfactory to you, I will briefly sum up the method of cure which seems to me most available, since the cholera has appeared among us. I have stated that the premonitory signs of the disease involve an irregular action of the functions of the stomach and intestinal canal. The calculation is a safe one, that at least sixty or seventy thousand persons have experienced, in some form or other, the detrimental influence of that mysterious cause which now pervades our atmosphere. Hence disorders of the stomach and bowels have been, and are, abundantly prevalent: diarrhœa sometimes for a few hours only, often of several days continuance, has preceded the setting in of cholera; this

diarrhœa has been carried off by castor oil, by the eccoprotic mixture, by blood-letting, by calomel and pulvis purgans, or the like. In numerous other instances, the patient, having wholly overlooked this most usual, premonitory symptom, has been suddenly brought under the influence of cholera in its malignant form. In these cases, where this too frequent and morbid discharge of the alvine passages has been disregarded, it has been pathologically inferred, that the thinner portion of the blood has been carried off, and hence the inspissated, or viscid condition of the circulating mass of the vascular system. In such cases, too, a greater debility has existed, and the disease, when fully formed, has more triumphantly sustained its course;—whereas when this derangement has been of short duration, and the tone of the system consequently been less impaired, our sanative means have proved more efficient, and the physician's office has been gratefully and happily executed. It would seem, therefore, that the amount and duration of the premonitory alvine discharges, form at least some criterion of the crassitude of the sanguineous mass, and furnish data to regulate our prognosis.

There is a state of reaction which occurs, in some instances, when the patient survives the collapsed stage, which much resembles a depressed, continued fever: the coma, the suffused countenance, the slight febrile heat, restlessness, pulse, &c. sufficiently designate it. I need not dwell on the treatment. In this consecutive fever, which is

often greatest where internal stimuli have been injudiciously used, blood-letting or cupping may be advantageously employed: the alvine excretions are to be removed, which are often enormous in quantity, and offensive, and the case subjected to the common principles of cure. In this sequela there is great debility, which will often continue ten or fifteen days.

I am well aware, that in the treatment of cholera, objections are urged by some of eminent rank, against the use of the lancet; but others of equal respectability have persisted, and have had no reason to regret their practice. When however the constitution is subjected to the jurisdiction of the second, or rather collapsed stage of cholera, the most liberal application of sinapisms, over the thoracic and abdominal regions, and to the feet, and the potent liniments already noticed, are our chief support. In fine, we must strive to restore the circulation to the constricted capillaries, remove cerebral congestion, release, as it were, the heart, the better to enable it to propel its contents: we are to administer, internally, such stimuli as the peculiarities of temperament and habits demand.

There is one fact, I must here observe, which induces some to give a preference to the lancet rather than to leeches, where the detraction of blood is indicated, and we can command the flow. Leeches very inefficiently do their duty on the cold and deserted surface of a cholera subject; and hence, too, sinapisms are far more serviceable

than blisters. A healthy discharge from blisters is not often witnessed.

I here offer a passing remark, which might with more fitness have been made elsewhere in this hurried letter. Though you will find the observation often repeated, that cholera is preceded by diarrhœa, you are not uniformly to depend on such premonitory evidence, even where the intestinal canal is affected. Several individuals, whose habit of body was generally loose, have experienced the reverse, and suffered from costiveness, which eventuated in an attack of cholera. As you are familiar with a peculiar disorder of the south, and of certain warm latitudes, characterized by occasional fever and chronic looseness of the alvine excretions, it may be well enough to bear in recollection; that the premonitory diarrhœa of cholera is, in some cases, not unlike that too often fatal looseness. The late Dr. Baillie, of London, has described in part this disorder in the Transactions of the College of Physicians. I have seen a few examples of the disease in patients from the southern states. As might readily be inferred, the cases of cholera which occur in intemperate habits, bear the lancet with less advantage than other subjects.

The success which crowned the adventurous experiment of injecting the saline solution into the veins of some few desperate cholera cases abroad, has emboldened several of our practitioners to make a like trial here, both in public and in private practice. You will find, in a late number of

the London Lancet, the details of the foreign experimenters, Dr. Latta, Dr. Craigie, Dr. Mackintosh, and others, founded upon the recent investigations of Dr. O'Shaughnessey, concerning the changes which the blood undergoes in malignant cholera, and the practical views entertained by Dr. William Stevens, of Santa Cruz, on the state of the blood in yellow fever. Of about forty-two subjects, in which our practitioners have had recourse to this method of cure, four only, as far as I can learn, have been thereby saved. Two of these successful experiments were made in Crosby-street hospital, under the charge of Dr. Rhineland, where, I believe, thirteen cases have been tried. In the first successful one forty ounces were injected, of a solution composed of the carbonate of soda one drachm, of muriate of soda two drachms, dissolved in six pints of water. The patient was a female, in the collapsed state. In the other successful case, a female, in like hopeless condition, had a similar injection, to the extent of one hundred and five ounces. The largest quantity of the saline injection that has as yet been introduced by Dr. Depeyre, by whom the two fortunate experiments were made, was three hundred and thirty-two ounces. The injection was made of the temperature of blood warmth, or rather higher, and introduced into the median cephalic vein. Dr. Depeyre says he will hereafter try the vena saphena. From the examples which I have seen of this practice, I should deem it justifiable only in the extreme instances of

collapse, when every other prospect of cure was lost. In such forlorn condition the saline injections are fully justifiable. The resuscitation of a patient by the saline liquids presents a change from the collapsed state, that, indeed like galvanic life, seems next to miraculous; but after beholding this gratifying spectacle, the struggle of reanimation which soon ensues, exhibits a contest with vitality and death too terrific for delineation even by Fuseli.—The cerebral engorgement and the spasmodic workings of tenacious existence set at nought description: and still, I would maintain, there are cases in which venous saline injections ought to be used. *Forsan scintillula lateat.*

In the few autopsic examinations of subjects dead, after venous injection had been employed, great cerebral congestion has been found, and air within the heart, mesentery, and large blood vessels. This circumstance led Dr. Depeyre to lay aside the usual forcing apparatus, and substitute a barometrical glass tube, four feet long, with a funnel at one end, and a gum elastic tube, twelve inches in length, at the other. The tube terminates in a delicate pipe, and a small stop-cock. It possesses decided advantage over the syringe, and air is effectually excluded. The air was, doubtless, a prominent cause of failure in several of the cases.

You will thus see, sir, from this brief notice, that the treatment of cholera asphyxia, like the physiological reasoning on the cause and nature of the disorder, exhibits much diversity of principles. Ne-

vertheless, I think we are furnished with some sound therapeutical indications; and the greater success in practice of some in combating the disease, is proof demonstrative that even in our speculations a preference is sometimes to be given.

I purpose saying a few words on the peculiar character of this pestilence. It is conceded by all, that the origin of epidemic diseases is still enveloped in great obscurity; and the theories on this subject, whether referring to a distempered state of the atmosphere, to exhalations from putrid animal or vegetable matter, or to specific contagion, have been alike conjectural and unsatisfactory. The cholera, like all preceding epidemics, has exercised, but without any very useful results, the ingenuity of the speculative and philosophical observer. Whether the *materies morbi* of cholera claims a sidereal or a telluric origin, the atmosphere is the medium through which it operates. It prevails in all climates and at all seasons; it exists in every variety of soils; on mountains and in valleys, in marshes and on rocks, in dryness, and in humidity. Unlike influenza and some other specific diseases, its ravages are independent of winds and currents; neither the analysis of the gases of the atmosphere, nor barometrical or thermometrical investigations, solve the difficulty of its birth, and we are baffled in reviewing its progress to ascertain the peculiar influence of localities in producing it. The inhabitants of the dense city and the barren plain are subjected to its de-

vastating power. Such, it must be admitted, is the fact, as relates to cholera asphyxia: yet so many anomalies appear in the career of this disease, that future observation and research are demanded, the better to discover its concealed cause, and the principles of its inter-communication. We must admit a distempered atmosphere, from whatever modifying agencies, and where men most do congregate, and local impurities most abound, there we infer an atmospheric condition from which cholera derives aid, to give strength to its venom, and wings to its extension. Deviations or extraordinary vicissitudes in the state of the seasons, and unfavorable localities, are perhaps conspicuously to be classed among the pestilential and co-operative causes. It follows in the tract of human intercourse. Predisposition to the disease is acquired, and the exciting causes which call it forth embrace the innumerable circumstances connected with the economy of man in every state and condition: errors in diet and regimen; poverty, and its concomitants; wealth, with its indulgencies; ill ventilated situations or apartments; the influence of fear, and whatever undermines the physical energies. The cholera courts the inebriate and the imprudent; the sober and the temperate are not exempt from its grasp; it attacks infantile existence, manhood, and old age; the voluptuary and the ascetic; both sexes, and all colors; the unacclimated stranger, and the native citizen. To record its numerous occasional and

exciting causes would require pages. Our prophylactics, therefore, must be summarily stated: the earliest attention is to be given to the premonitory diarrhœa; and among the essential requisites are pure air, personal cleanliness, food for the hungry, raiment for the naked, the avoidance of extremes of temperature, rigid dietetics, great moderation in the use of ardent drinks, or rather their total prohibition; the mind sustained by conscientious resolution, and a fixed confidence in a protecting Providence.

That localities influence the character and extent of the pestilence, and aggravate its type in particular places in New-York, we have multiplied proofs; but there is something in the march of this disease which eludes our powers of detection. As if to add to its mysterious career, it has recently made its appearance in the village of Harlaem, situate about seven miles from this city, where its malignancy and fatality have, within the period of a few days, far surpassed the worst results we have encountered among the most wretched and depraved of our population. I am credibly informed, that of sixty cases there was not a recovery. Three of the doctors, all I believe the place could boast of, fell beneath its stroke. Our latest account of its progress show that it has propagated itself through our beautiful western country, from Albany on the Hudson to Buffalo on Lake Erie. Its extensive ravages give but a too well-grounded apprehension that it is destined to pervade our land.

I have expressed the opinion, that the physiognomy of cholera asphyxia renders it, when once practically known, indelible on the memory; and I would, with all due deference, guard you against adopting the belief that the epidemic disease now prevailing, is only a modification of the usual cholera morbus of the United States. In whatever attire it approaches, you will find it a stranger. Equally earnest would I be to caution you in too hastily supposing that the malignant cholera is the same, or a disease similar to the spotted fever, or malignant pleurisy, or sinking typhus, as certain disorders have been termed. Nosology cannot classify a more distinctive disease than the prevailing cholera; and the confounding the spotted fever, the malignant pleurisy, and the sinking typhus of some of our northern and eastern states, with this strikingly characteristic disease, is discarding the leading principles which govern in the classification of morbid phenomena. You may deem these remarks superfluous; but, inasmuch as some have pronounced an identity in these diseases, and extolled, as the best method for the treatment of cholera, the almost unmeasured internal use of the diffusible stimuli, such as brandy, ether, and the like, and the excessive employment of opium, and other narcotics, I have no hesitation to add, that a like fatality would follow such practice in cholera as was witnessed from this empirical method many years ago, when spotted fever prevailed extensively among us. See the report of the Mas-

sachusetts Medical Society on the treatment of the spotted fever by this unwarrantable practice.

Medical records abound in the declaration, that upon the invasion of pestilential diseases, the first cases are generally of most malignancy and fatality; and facts of this sort are sometimes explained on the principle that those unfortunate individuals were most susceptible of the action of the noxious cause. In the progress thus far of the epidemic cholera among us we still meet with examples marked by as formidable symptoms, and of as rapid termination, as at the commencement of the disease; and hence it is to be regretted, that some of our authorities have promulgated the opinion that the complaint is already of a mitigated type. Whatever our hopes, we have as yet no such grounds of congratulation. Look, too, at the history of the Montreal pestilence.

There is another error, fraught with much hazard, which has lately received the sanction of authority. The medical council of our board of health have invited our absent citizens to an early return, and assert that those who have fairly passed through one attack of the disease, in the form of diarrhoea or of malignant cholera, may expect exemption from another. Be assured, this declaration is wholly untenable. There is no such immunity from a second attack of cholera, and our proofs establish a contrary doctrine. Cases are within the experience of several of our practitioners, of persons who had fairly gone through a first

attack, and have fallen victims to a second. Very lately an individual had a protracted recovery from a third attack.

On no former occasion has New-York, frequently visited by the direful ravages of the yellow fever, exhibited a more melancholy spectacle. Of a resident population of two hundred and twenty thousand, and of transitory inhabitants more than twenty-five thousand at the time of the first occurrence of this pestilence, at least one-third are now dispersed in every direction. It is impossible to give you at present any just view of the number of cases and deaths; the former are but too imperfectly reported to our board, and hence the number of interments seems extraordinary when compared with the reported cholera cases. About the middle of July the disease was most rife, and on one day of that month we had three hundred and eleven cases in public and private practice—interments one hundred and fifty-six. When we advert to the situation of the larger portion of those dependent on their daily labor for their daily food, it requires no effort of the imagination to picture the consequent distress. To the medical faculty, let me observe by the way, the inhabitants of this city are most deeply indebted at this moment. A small part, indeed, have fled, recreant to their honor and their duty; but the great body of them have, thus far, evinced to my own personal knowledge, a degree of courage and industry, which no hazard or difficulty has overcome. To no class of our citizens

are pestilential diseases more injurious in their prudential consequences: exposure to disease and death, with no other remuneration than the consciousness of duty, is the necessary attendant on every epidemic pestilence. When this formidable disease shall have disappeared from among us, and its history be recorded by the faithful historian, the skill and humane exertions of the medical profession, the munificence of the affluent, and the disinterested benevolence of all classes will not be forgotten.

Excuse the imperfections of this letter, written amidst the cares of an anxious crisis. With the wish that yourself and your fellow-citizens of Savannah may escape every practical knowledge of the disease, I remain, with sentiments of high personal regard and respect,

JOHN W. FRANCIS.

and the only thing that is true in the present
 world is that we are all going to die. But
 death is not the end of the world. It is
 only the beginning of a new world. And
 the new world is not a world of death.
 It is a world of life. It is a world of
 hope. It is a world of love. It is a
 world of peace. It is a world of
 joy. It is a world of beauty. It is a
 world of goodness. It is a world of
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